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# *IRACEMA CABOCLA* NEW GENUS AND SPECIES OF A THERAPHOSID SPIDER FROM AMAZONIC BRAZIL (ARANEAE, THERAPHOSINAE)

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**ABSTRACT.** The new genus *Iracema* (Araneae, Theraphosidae, Theraphosinae) comprising the only species *Iracema cabocla,* from the Amazonic state of Roraima, Brazil, is described. The cladistic relationships of this genus within the Theraphosinae are analyzed.

**Keywords:** Theraphosid phylogeny, Amazonic spider, systematics

Theraphosidae is the most diverse family of the Mygalomorphae, comprising around 80 genera and 800 known species (Coddington & Levi 1991). The subfamily Theraphosinae only occurs in the New World, mainly in the Neotropics, and has been revised recently by Pérez-Miles (1992, 1998) and Pérez-Miles et al. (1996). Following the reasoning of Coddington & Levi (1991) that one third of all spider genera occur in the Neotropics and only 20% of world fauna is described, a large number of Theraphosinae taxa are expected to be discovered, especially considering the poor knowledge of the group. Examining the spider collection of the INPA (National Institute for Amazonic Research, Manaus, Brazil) four specimens of Theraphosidae from Maracá, Roraima, Brazil, were found. These spiders did not fit with any known theraphosid genus, suggesting that they represent a new genus. The study of these spiders showed that they share the main synapomorphies of the Theraphosinae: extended subtegulum, keel on palpal bulbs, theraphosine types of urticating hairs and unilobular spermathecae, which encouraged me to place this new genus within this subfamily. The addition of *Iracema* to a previous cladistic analysis showed that it would be the sister group of *Cyriocosmus* Simon 1903.

## METHODS

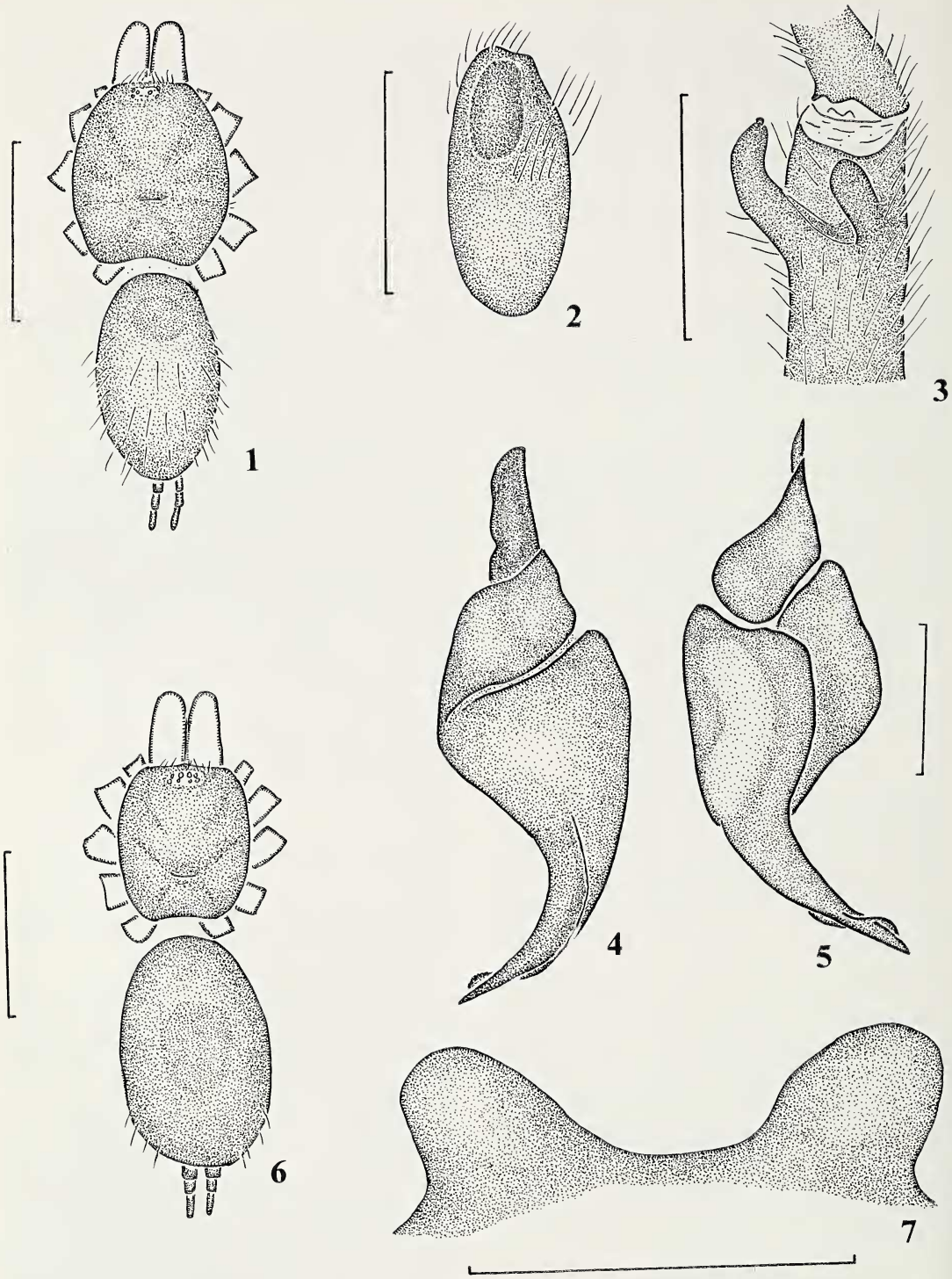
*Abbreviations:* AME = anterior median eyes, ALE = anterior lateral eyes, PME = posterior median eyes, PLE = posterior lateral eyes, OQ = ocular quadrangle (including lateral eyes), d = dorsal; p = prolateral, r = retrolateral, v = ventral; INPA (Instituto Nacional de Pesquisas Amazônicas). All measurements are in mm and were taken using an ocular micrometer. Drawings were made with a camera lucida. Cladistic analysis was based on the previous matrix of Theraphosinae genera (Pérez-Miles 1998, Pérez-Miles et al. 1996) using the Pee-Wee (version 2.5.1) program, developed by Goloboff (1993); multistate characters are considered as additive because they are part of logically ordered transformation series or morphoclines. Other cladistic techniques follows Pérez-Miles et al. (1996).

## *Iracema* new genus

**Type species.** ***Iracema cabocla*** new species.

**Etymology.**—Iracema (feminine) is an anagram of America and the title of the most famous novel of the Brazilian writer José de Alencar, which describes the destruction and oppression of native Amazonic people through contact with civilization.

**Diagnosis.**—*Iracema* differs from most theraphosid genera in the presence of a process in the retrolateral face of male palpal tibia. Additionally differs from several genera of Theraphosinae in the presence of Type IV urticating hairs and in the very reduced number of labial cuspules. Females lack Type III urticating hairs which are present in males. *Iracema* differs from *Cyriocosmus* in the palpal organ by lacking a paraembolic apophysis and in the spermathecae by the lack of a spiral neck and a caliciform fundus. *Iracema* differs




Figures 1–7.—***Iracema*** cabocla new species. 1–5, Holotype male from Brazil, Roraima, Maracá. 1, Dorsal view (scale = 10 mm); 2, Right palpal tibia showing the retrolateral process (scale = 5 mm); 3, Right tibia I, distal portion showing the prolateral tibial apophysis (scale 5 mm); 4, Left palpal organ, prolateral view (scale = 1 mm); 5, Left palpal organ, retrolateral view (scale = 1 mm). 6, 7, Paratype female from Brazil, Roraima, Maracá. 6, Dorsal view (scale = 10 mm); 7, Spermathecae, ventral view (scale = 1 mm).

Table 1.—*Iracema cabocla* new species. Male holotype and (male paratype), length of leg and palpal segments.

| | I | II | III | IV | Palp |
|---|---|---|---|---|---|
| Femur | 10.8 (10.3) | 9.5 (8.8) | 8.5 (8.0) | 11.2 (10.5) | 5.7 (5.7) |
| Patella | 5.0 (5.0) | 4.7 (4.7) | 4.0 (4.0) | 4.7 (4.5) | 3.3 (3.6) |
| Tibia | 9.2 (9.3) | 7.2 (7.0) | 6.5 (6.2) | 9.3 (8.8) | 5.3 (4.8) |
| Metatarsus | 8.2 (7.8) | 7.8 (7.6) | 8.6 (8.8) | 12.5 (12.0) | — |
| Tarsus | 4.8 (5.2) | 5.0 (4.5) | 5.0 (4.6) | 5.4 (5.5) | 1.9 (2.0) |

from *Grammostola* Simon 1892 by the absence of stridulatory hairs and from *Plesiopelma* Pocock 1901 by the absence of a nodule on the male metatarsus I. The palpal organ of *Iracema* differs from that of *Homoeomma* Ausserer 1871 by the absence of a digitiform apophysis and from that of *Paraphysa* Simon 1892 by the presence of a process on the retrolateral face of palpal tibia. It also differs from *Paraphysa* by the very reduced number of labial cuspules (3, being more than 10 in *Paraphysa*) and by the divided tarsal scopulae. This character was seriously questioned by Pérez-Miles (1994) because it could mainly reflect differences in size. All generic characters are coded in Table 3.

### *Iracema cabocla* new species
Figs. 1–7; Tables 1–2

**Types.**—Holotype male, from Maracá, Roraima Brazil, 18 July 1987 (Steve Bowles in pit-fall trap). Paratypes: 24 July 1987 (Steve Bowles in pit-fall traps), 1♂2♀ from the same locality of the holotype. All specimens are deposited in the collection of the INPA, Manaus, Brazil.

**Etymology.**—The specific epithet is a noun in aposition from the Portuguese feminine word "cabocla" which refers to the people (women) from the Amazonic forests. Traditionally it refers to the de-tribalized Indians and diverse racial mixture with Indian blood.

**Diagnosis.**—The diagnostic generic characters of this monotypic genus can also be used to recognize the species *Iracema cabocla*.

**Description.**—*Male:* (holotype). Total length, not including chelicerae nor spinnerets 25.6; carapace length 11.2, width 10.33. Anterior eye row slightly procurved, posterior slightly recurved. Eyes sizes and interdistances: AME 0.38, ALE 0.43, PME 0.25, PLE 0.30, AME-AME 0.25, AME-ALE 0.20, PME-PME 0.82, PME-PLE 0.05, ALE-PLE 0.20, OQ length 0.9, width 1.7, clypeus 0.25. Fovea transverse, straight, width 1.7. Labium length 1.4, width 1.9 with 3 cuspules, maxillae with 66 cuspules. Sternum length 4.9, poststernal sigilla oval, submarginal. Chelicerae with 9 teeth on the promargin (5 proximal of them smaller). Tarsi I-IV densely scopulated, scopulae divided by a stripe of longer, thicker setae; this stripe is narrow in forelegs to wide in hindlegs. Metatarsi I and II scopulate on distal half, III apically scopulate, IV ascopulate. Palpal tibia with a process on the retrolateral face in distal portion (Fig. 2); ventrally two fields of spiniform hairs present (prolateral and retrolateral). Tibia I with prolateroventral, distal double apophysis (Fig. 3). Flexion of metatarsus I between tibial apophysis. Palpal organ piriform, as in Figs. 4–5. Length of leg and palpal segments given in

Table 2.—*Iracema cabocla* new species. Female paratypes (described), length of leg and palpal segments.

| | I | II | III | IV | Palp |
|---|---|---|---|---|---|
| Femur | 6.5 (6.7) | 5.7 (5.7) | 5.1 (5.3) | 7.2 (7.1) | 4.9 (4.9) |
| Patella | 4.0 (4.0) | 3.4 (3.5) | 3.1 (3.3) | 3.5 (3.8) | 2.9 (2.7) |
| Tibia | 5.3 (5.2) | 4.2 (4.2) | 3.7 (4.0) | 5.7 (5.8) | 3.3 (3.5) |
| Metatarsus | 4.2 (4.1) | 4.2 (4.0) | 4.6 (4.7) | 7.3 (7.6) | — |
| Tarsus | 2.8 (2.9) | 2.7 (2.9) | 3.1 (3.0) | 3.4 (3.5) | 3.5 (3.5) |

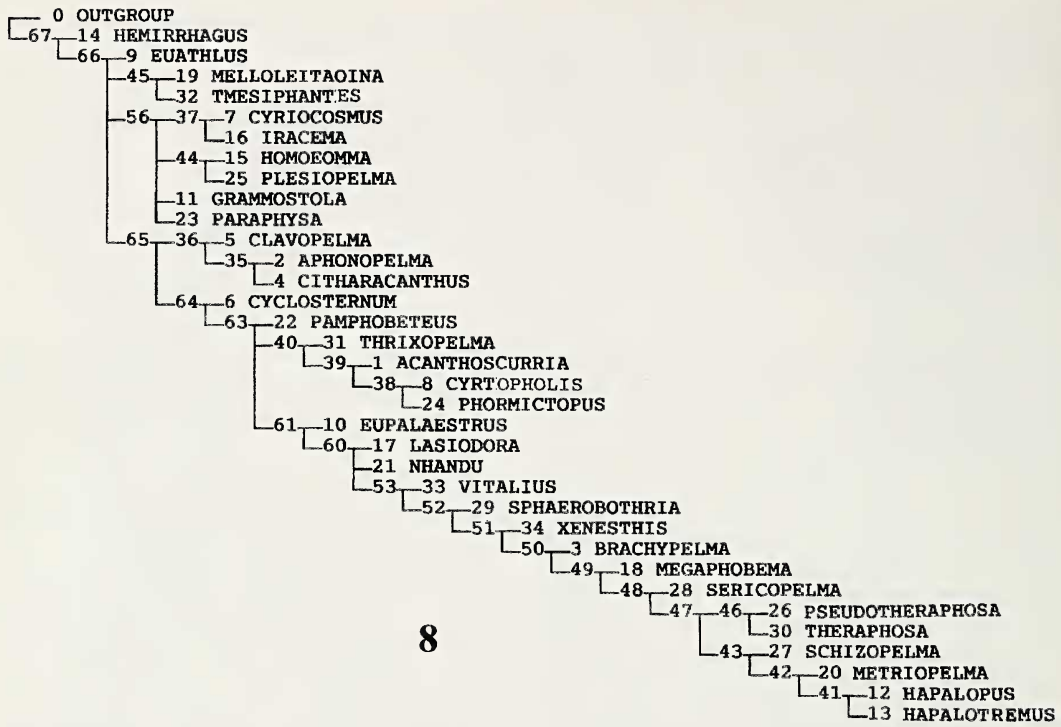



Figure 8.—Tree of genera of Theraphosinae, including ***Iracema*** new genus (fit 128.0, 80 steps).

Table 1. Femur III swollen. Spination: Femora I-IV and palp I 2P; II 2P; III 3R; IV 1R; Palp 1P. Patellae I-IV and palp 0. Tibiae I 2P, 2V; II 2P, 6V, 1R; III 2P, 4V, 2R; IV 4P, 4V, 2R, Palp 2P. Metatarsi I 1V; II 1P, 5V, 1R; III 5P, 3-4V, 2R, 2D; IV 7P, 4V, 6R, 0-1D. Tarsi I-IV without spines. Color: Cephalothorax reddish-brown; legs and abdomen dark brown. Types III and IV urticating hairs present.

*Female:* (paratype). Total length, not including chelicerae nor spinnerets 23.5. Cephalothorax length 9.5, width 8.5. Anterior eye row straight to slightly procurved, posterior row slightly recurved. Eye sizes and interdistances: AME 0.40, ALE 0.45, PME 0.23, PLE 0.25, AME-AME 0.20, AME-ALE 0.10, PME-PME 0.78, PME-PLE 0.05, ALE-PLE 0.15, OQ length 0.7 width 1.3, clypeus 0.13. Fovea procurved width 2.0. Labium length 1.50, width 1.95 with 3 cuspules, maxillae with 90 cuspules. Sternum length 4.3, poststernal sigilla oval, narrow, submarginal. Chelicerae with 9 teeth on the promargin (4 of them proximal, smaller). Tarsi densely scopulate, scopulae divided by a stripe of longer, thicker setae; this stripe is narrow in forelegs to wide in hindlegs. Metatarsi I and II scopulate on distal half, III apically scopulate, IV ascopulate. Length of leg and palpal segments in Table 2. Spination: Femora I-IV and palp, I 1P; II 1P; III 1P, 1D, IV 1D; palp 1P. Patellae I-IV and palp 0. Tibiae I-IV and palp, I 3V; II 1P, 3V; III 2P, 3V, 2R; IV 2V, 1R; palp 1P, 3V. Metatarsi I-IV, I 4V, II 2P, 4V, 1D; III 2P, 4V, 2R; IV 2P, 8V, 5R, 2D. Tarsi I-IV and palp 0. Cephalothorax and legs light reddish-brown, abdomen grey-brown. Only Type IV urticating hairs present. Spermathecae with two receptacles only partly fused (Fig. 7).

**Distribution.**—*Iracema cabocla* is only known from the type locality, Maracá, Roraima, Brazil, with no further information available.

**Cladistic relationships.**—Including *Iracema* in the matrix of Pérez-Miles et al. (1996: 37, table 2) modified in the analysis of Pérez-Miles 1998a (Table 3); the most parsimonious tree of total fit 128.0 (43% ) and 83 steps was found (Fig. 8 ), in which *Iracema* was resolved as the sister group to *Cyriocosmus*. Both share the retrolateral process on the palpal tibia (Pérez-Miles 1998b).

**List of synapomorphies.**—*Acanthoscurria:* char 4: 1 → 2, char 6: 0 → 1; *Brachy-*

Table 3.—Character matrix of genera of Theraphosinae. Characters and (states) as follow: 0 Apical region of palpal bulb: subcylindrical (0), subconical (1), concave-convex (2). 1 Relative width of sclerites II+III of bulb: narrow (less than 10% of length) (0), wide (1). 2 Paraembolic apophysis: absent (0), present (1). 3 Bulbal keels: smooth (0), serrated (1). 4 Bulbal keels: two subequal (0), two inequal (1), one peripheric (2), one peripheric plus supernumeraries (3). 5 Subtegulum: not extended (0), large extended (1). 6 Male tibial apophysis (leg I): double (0), one (1), absent (2). 7 Digitiform apophysis of bulb: absent (0), present (1). 8 Metatarsus I of male: without basal process (0), with basal process (1). 9 Male palpal tibia: without retrolateral process (0), with retrolateral process (1). 10 Male palpal tibia: without retrolateral cluster of spines (0), with retrolateral cluster of spines (1). 11 Male palpal tibia without prolateral process (0), with prolateral process (1). 12 Flexion of metatarsus I (males): on outer side of tibial spurs (0), between tibial spurs (1). 13 Spermathecae: with two receptacles separated or only partly fused (0), widely fused (1), single semicircular receptacle (2), single oval receptacle (3). 14 Spermathecae multilobular in each side (0), unilobular at least in each side (1). 15 Femur III: not incrassate (0), incrassate (1). 16 Tibia IV: not incrassate (0), incrassate (1). 17 Femur IV: without retrolateral scopula (0), with retrolateral scopula (1). 18 Urticating hairs type I: absent (0), present (1). 19 Urticating hairs type III absent (0), present (1). 20 Urticating hairs type IV: absent (0), present (1). 21 Trochanteral "stridulatory" hairs: absent (0), present (1). 22 Coxal "stridulatory" hairs: absent (0), present (1). 23 Coxal spinules: absent (0), present (1). 24 Labial cuspules: numerous (more than 15) (0), few or none (0). 25 Fovea: normal (0), with spheroid process (1). 26 Metatarsus I of males: normal (0), strongly curved (1). 27 Urticating hairs on prolateral palpal femur: absent (0), present (1). 28. Urticating hairs type VI: absent (0), present (1). 29 Coxae: normal (0), retrolaterally extended (1).

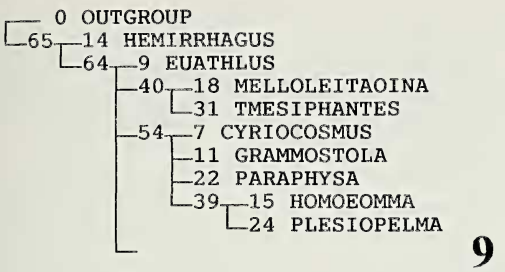
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OUTGROUP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Acanthoscurria* | 1 | 1 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | ? | 0 | 1 |
| *Aphonopelma* | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Brachypelma* | 2 | 1 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| *Citharacanthus* | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | ? | ? |
| *Clavopelma* | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Cyclosternum* | 1 | 1 | 0 | ? | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Cyriocosmus* | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| *Cyrtopholis* | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 |
| *Euathlus* | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ? |
| *Eupalaestrus* | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Grammostola* | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Hapalopus* | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 1 |
| *Hapalotremus* | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 |
| *Hemirrhagus* | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? | 0 | 1 |
| *Homoeomma* | 0 | ? | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | ? | 1 | 0 | 1 |
| *Iracema* | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| *Lasiodora* | 1 | 1 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| *Megaphobema* | 2 | 1 | 0 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 |
| *Melloleitaoina* | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Metriopelma* | 1 | 1 | 0 | 0 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | ? | 3 | 1 |
| *Nhandu* | 1 | 1 | 0 | 1 | 2 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| *Pamphobeteus* | 2 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| *Paraphysa* | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Phormictopus* | 2 | 1 | 0 | 0 | ? | 1 | 0 | 0 | 0 | ? | 0 | 0 | 0 | 0 | 1 |
| *Plesioplema* | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | ? | 0 | 1 | 0 | 1 |
| *Pseudotheraphosa* | 2 | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 |
| *Schizopelma* | 1 | 1 | ? | 0 | 2 | 1 | 1 | 0 | 0 | 0 | ? | 0 | ? | ? | ? |
| *Sericopelma* | 2 | 1 | 0 | 0 | 4 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | ? | 2 | 1 |
| *Sphaerobothria* | 2 | 1 | 0 | 1 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| *Theraphosa* | 2 | 1 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | ? | 2 | 1 |
| *Thrixopelma* | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| *Tmesiphantes* | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Vitalius* | 1 | 1 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| *Xenesthis* | 2 | 1 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |

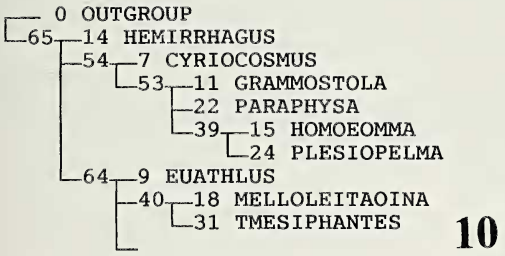
Table 3.—Extended.

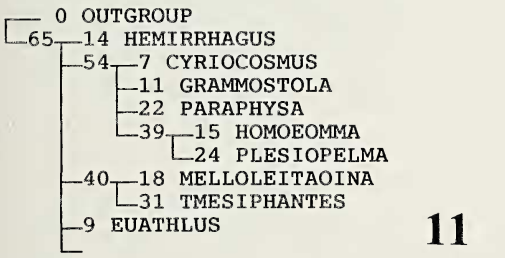
| | 5 | 6 | 7 | 8 | 9 | 20 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OUTGROUP | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Acanthoscurria* | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Aphonopelma* | ? | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Brachypelma* | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Citharacanthus* | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Clavopelma* | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Cyclosternum* | 0 | 0 | 0 | ? | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Cyriocosmus* | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Cyrtopholis* | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | ? | 0 | 0 | 0 | 0 | 0 | 0 |
| *Euathlus* | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Eupalaestrus* | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Grammostola* | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Hapalopus* | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| *Hapalotremus* | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 |
| *Hemirrhagus* | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ? | 0 | 0 | 0 | ? | 0 | 1 | 1 |
| *Homoeomma* | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | ? | 0 | 0 | 0 |
| *Iracema* | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| *Lasiodora* | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Megaphobema* | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Melloleitaoina* | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| *Metriopelma* | ? | 0 | 0 | ? | ? | ? | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Nhandu* | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pamphobeteus* | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Paraphysa* | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | ? | 0 | 0 | 0 | 0 | 0 |
| *Phormictopus* | 0 | 0 | ? | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Plesiopelma* | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Pseudotheraphosa* | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Schizopelma* | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Sericopelma* | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Sphaerobothria* | ? | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| *Theraphosa* | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Thrixopelma* | 0 | 0 | 1 | ? | ? | ? | 0 | 1 | 1 | 0 | 0 | 0 | ? | 0 | 0 |
| *Tmesiphantes* | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Vitalius* | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| *Xenesthis* | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*pelma:* char 17: 1 → 0; *Citharacanthus:* char 12: 0 → 1; char 21: 0 → 1; *Cyriocosmus:* char 2: 0 → 1, char 10: 0 → 1, char 19: 1 → 0; *Cyrtopholis:* char 11: 0 → 1; *Eupalaestrus:* char 15: 0 → 1, char 16: 0 → 1; *Grammostola:* char 22: 0 → 1; *Hapalopus:* char 10: 0 → 1; *Hapalotremus:* char 0: 1 → 0, char 1: 1 → 0, char 4: 2 → 1, char 24: 0 → 1; *Hemirrhagus:* char 28: 0 → 1, char 29: 0 → 1; *Homoeomma:* char 3: 0 → 1, char 7: 0 → 1; *Iracema:* char 4: 1 → 0, char 12: 0 → 1, char 15: 0 → 1, char 24: 0 → 1; *Lasiodora:* char 22:0 → 1; *Megaphobema:* char 15: 0 → 1; *Melloleitaoina:* char 24: 0 → 1; *Metriopelma:* char 6: 1 → 2; *Nhandu:* char 6: 0 → 2; *Pamphobeteus:* char 0: 1 → 2, char 12: 0 → 1; *Phormictopus:* char 0: 1 → 2, char 22: 0 → 1; *Pseudotheraphosa:* char 6: 1 → 0; *Sericopelma:* char 6: 1 → 2; *Sphaerobothria:* char 17: 1 → 0, char 21: 0 → 1, char 25: 0 → 1; *Theraphosa:* char 6: 1 → 2; *Thrixopelma:* char 22: 0 → 1, char 23: 0 → 1; *Xenesthis:* char 12: 0 → 1.

Node 35: char 19: 1 → 0; Node 36: char 23: 0 → 1; Node 37: char 9: 0 → 1; Node 38: char 19: 1 → 0; Node 39: char 21: 0 → 1; Node 40: char 9: 0 → 1; Node 41: char 6: 1 → 0, char 26: 0 → 1; Node 42: char 17: 1 → 0; Node 43: char 0: 2 → 1, char 4: 3 → 2; Node 44: char 8: 0 → 1, char 12: 0 → 1; Node 45: char 15: 0 → 1; Node 46: char 22: 0 → 1; Node 47: char 4: 4 → 3, char 18: 1 → 0;




Figures 9–11.—Alternative resolutions of node 65 of three trees of maximum fit, from the matrix of Pérez-Miles 1998 (unpublished). Node 54 includes genera which share the apomorphic presence of Type IV urticating hairs.

Node 48: char 6: 0 → 1; Node 49: char 13: 1 → 2; Node 50: char 4: 3 → 4, char 19: 0 → 1; Node 51: char 3: 1 → 0; Node 52: char 0: 1 → 2, char 4: 2 → 3; Node 53: char 19: 1 → 0; Node 56: char 20: 0 → 1; Node 60: char 4: 1 → 2, char 13: 0 → 1; Node 61: char 3: 0 → 1; Node 63: char 17: 0 → 1; Node 64: char 0: 0 → 1, char 1: 0 → 1; Node 65: char 18: 0 → 1; Node 66: char 19: 0 → 1; Node 67: char 14: 0 → 1.

## DISCUSSION

*Iracema* is included in Theraphosinae by sharing the synapomorphies of the subfamily. In the cladogram (Fig. 8) *Iracema* was related with the node 56 which includes the group of genera of node 43 in the cladogram of Pérez-Miles et al. (1996: 43, fig. 2). In both trees these nodes relate *Cyriocosmus, Grammostola, Paraphysa, Homoeomma* and *Plesiopelma* based on the synapomorphic presence of Type IV urticating hairs, also present in *Iracema*. The sexual dimorphism of *Iracema* with respect to the presence of urticating hairs is remarkable; the male has types III and IV while female has only type IV. Recently Bertani (1997) found that in several theraphosid species the males have types I and III urticating hairs while females have only type I. The study of juveniles and the ontogeny of urticating hair types in these species seems to be crucial in determining if Types I and III are lost in females or gained by males during development. This fact has ecological implications related to adult life strategies, mainly relating to theraphosid males being more errant than females. Also, this kind of study could enlighten the phylogenetic aspects of these important characters as well as the possible different functions of different hair types.

The presence of a process in the retrolateral face of palpal tibiae in *Iracema*, somewhat resembles the process of *Cyriocosmus* indicated by Pérez-Miles (1998b), but in the latter genus the process includes a field of spines absent in *Iracema*. This process is also present in other genera group which lack Type IV hairs: *Acanthoscurria* Ausserer 1871, *Cyrtopholis* Simon 1892 and *Phormictopus* Pocock 1901. Another striking character of *Iracema* is the extreme reduction of labial cusps found only in other two theraphosid genera: *Hapalotremus* Simon 1903 and *Hapalopus* Ausserer 1875 (the last without labial cusps); these genera are far from *Iracema* considering other characters (Table 3). They also lack Type IV urticating hairs.

In a previous analysis of the Theraphosinae, Pérez-Miles (1998) obtained three trees of maximum fit (131.5 and 79 steps). These trees show differences in the internal relationships of the node involving genera with Type IV urticating hairs (Figs. 9–11). The present cladistic analysis resulted in only one tree which is better resolved with the inclusion of *Iracema*.

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